9/1/2021

Justin Reilly
Colliers International
2267 Gundersen Dr.
San Jose, CA 95125
(408) 482-1033
justin.reilly@colliers.com

Re: Tree protection for New Single-Family Home at 16484 South Kennedy Road, Los Gatos, CA, 95030, Parcel 1

Dear Justin,

At your request, we have visited the property referenced above to evaluate the trees present with respect to the proposed project. The report below contains our analysis.

Summary

There are 102 protected trees on and adjacent to this property. Ten, all on this property, are recommended for removal, as they conflict with project features.

All other trees are in good condition and should be retained and protected as detailed in the Recommendations, below. With some design modifications and proper protection, all are expected to survive and thrive during and after construction. If design modifications cannot be made, some additional trees may need to be removed.

Assignment and Limits of Report

We have been asked to write a report detailing impacts to trees from the proposed [Project description] on this property. This report may be used by our client and other project members as needed to inform all stages of the project.

All observations were made from the ground with basic equipment. No root collar excavations or aerial inspections were performed. No project features had been staked at the time of our site visit.

Tree Regulations

In the Town of Los Gatos, arborist reports for development projects are governed by the guidelines in the document titled "TREE PROTECTION REQUIREMENTS FOR PLANNING APPLICATIONS[1].

For this project, the following part of the protected tree definition from section 23.10.0955 of the Los Gatos town code[2] was used:

> (4) All trees which have a four-inch or greater diameter (twelve and one half-inch circumference) of any trunk, when removal relates to any review for which zoning approval or subdivision approval is required.

All trees to be removed require permits for removal and must be replaced per the following table:

[1] Available at: https://www.losgatosca.gov/DocumentCenter/View/18923/Arborist-report-checklist?bidId=

[2] Available at: https://library.municode.com/ca/los_gatos/codes/code_of_ordinances?nodeId=CO_CH29ZORE_ARTIINGE_DIV2TRPR_S29.10.0955DE

Canopy Size of Removed Tree [1]	Replacement Requirement [2, 4]	Single Family Residential Replacement Option [3, 4]
10 feet or less	Two 24-inch box trees	Two 15-gallon trees
More than 10 feet to 25 feet	Three 24-inch box trees	Three 15-gallon trees
More than 25 feet to 40 feet	Four 24-inch box trees; or Two 36-inch box trees	Four 15-gallon trees
More than 40 feet to 55 feet	Six 24-inch box trees; or Three 36-inch box trees	Not Available
Greater than 55 feet	Ten 24-inch box trees; or Five 36-inch box trees	Not Available

If planting a replacement tree is infeasible, and if approved by the town arborist, the following in-lieu fees apply:

24 inch box tree = $250
36 inch box tree = $500

Observations

Trees

There are 102 trees on and adjacent to this property, of which 46 are within the area of impact for this project. Sixty-five are coast live oaks (*Quercus agrifolia*), eight are California bays (*Umbellularia californica*), five are silver wattles (*Acacia dealbata*), and the remaining 23 are of various species.

Several trees in the rear portion of this property beyond the ditch display symptoms of sudden oak death (*Phytophthora ramorum*).

Project Features

A new single-family house is proposed, along with a three-car garage, covered rear patio, and pool.

Proposed hardscape comprises a driveway, four uncovered parking spaces, a trash enclosure, two walkways to the back yard, two patios, and pool hardscape. A synthetic lawn is proposed in one corner of the back yard.

During construction, the entrance to the proposed driveway will be occupied by a temporary gravel construction entrance.

A gate is proposed near the driveway entrance. No associated fence is shown, nor are any other fences.

Retaining walls will be needed for many project features. Grading of up to 2 feet is shown above (northwest of) the driveway; below (southeast of) the driveway; above the northwest walkway; and on the southeast side of the pool.

New water service is proposed near the southeast property line. No sewer, gas, or electrical service are shown.

A vegetated drainage swale up to 4" deep is shown wrapping around the rear of the property and both sides of the house, primarily the upper (northwest) side. Although a detail is given for a level spreader, no level spreaders are shown on the drainage plan.

Potential Conflicts

Trees #1, 7, 11-20, 23, 26-28, 31, 32, 34, 45-100, and Parcel 2 tree #24 - no features from this project lie within any of these trees' TPZs.[3] Some of these trees may be affected by features from the Parcel 2 project. Trees #45-100 are well away from all project features, on the other side of the ditch running through the middle of the property.

Trees #2-6 and 8-10 - the proposed water line lies within these trees' TPZs.

Trees #21, 22, 24, 25, 29, 30, 33, 35, and 38 - the proposed driveway and/or associated grading and/or retaining walls lie(s) within these trees' TPZs. The trunks of trees #24, 30, and 35 are within the driveway footprint, and the trunk of tree #33 lies just outside the retaining wall.

Tree #36 - this tree is effectively dead, so impacts are irrelevant. Its trunk and immediate root zone are not affected by any proposed project features.

Trees #37 and 39 - these trees' trunks lie within the footprint of the proposed parking area.

Tree #40 - this tree's trunk lies within the proposed house footprint.

[3] Tree protection zones. See Discussion, Tree Map, and Tree Inventory Table for more detail.

Trees #41 and 42 - these trees' trunks lie within or just outside the footprint of the proposed pool and associated retaining wall.

Tree #43 - portions of the proposed pool, synthetic turf area, and vegetated swale all lie within this tree's TPZ.

Tree #44 and Parcel 2 tree #25 - parts of the proposed vegetated swale lies within these trees' TPZs. A very small portion of the construction access route for the retaining wall for the pool patio area lies within the TPZ of Parcel 2 tree #25.

Testing and Analysis

Tree DBHs were taken using a diameter tape measure if trunks were accessible. The DBHs of trees with non-accessible trunks were estimated visually. All trees over 4 inches in DBH were inventoried.

Vigor ratings are based on tree appearance and experiential knowledge of each species.

Tree location data was collected using a GPS smartphone application and processed in GIS software to create the maps included in this report. Due to the error inherent in GPS data collection, and due also to differences between GPS data and CAD drawings, tree locations shown on the map below are approximate except where matched to the survey.

We visited the site several times between 1/11/2021 and 7/30/2021. All observations in this report were made at those site visits. All photographs were taken on 1/11/2021 and 1/21/2021.

Appraisals were performed only for trees in the area of impact. One species appraised, almond (*Prunus dulcis*) was not assigned a nursery class for Northern California in the Species Classification supplement, so we used the classification for peach (*Prunus persica*).

This report is based on the plan set titled "Plans for the Architecture and Site Approval (ASA): New Single Family Residence - Parcel 2," dated 8/23/2021, comprising sheets C1-C8, provided to me electronically by the client.

Discussion

Tree Protection Zones (TPZ's)

Tree roots grow where conditions are favorable, and their spatial arrangement is therefore unpredictable. Favorable conditions vary among species, but generally include the presence of moisture, and soft soil texture with low compaction.

Contrary to popular belief, roots of all tree species grow primarily in the top two feet of soil, with a small number of roots sometimes occurring at greater depths. Some species have taproots when young, but these almost universally disappear with age. At maturity, a tree's root system may extend out from the trunk farther than the tree is tall.

The optimal size of the area around a tree which should be protected from disturbance depends on the tree's size, species, and vigor, as shown in the following table (adapted from Trees & Construction, Matheny and Clark, 1998):

Species tolerance	Tree vitality[4]	Distance from trunk (feet per inch trunk diameter)
Good	High	0.5
	Moderate	0.75
	Low	1
Moderate	High	0.75
	Moderate	1
	Low	1.25
Poor	High	1
	Moderate	1.25
	Low	1.5

It is important to note that some roots will almost certainly be present outside the TPZ; however, root loss outside the TPZ is unlikely to cause tree decline.

Some of the tree species present here are not evaluated in Trees & Construction. Our own evaluation of them based on our experience with the species is as follows:

[4] Matheny & Clark uses tree age, but we feel a tree's vitality more accurately reflects its ability to handle stress.

Species	Estimated tolerance	Reason for tolerance rating
Almond	2	Sensitive to many different types of stress.
California bay	1	Highly tolerant of stress when young, but is a poor compartmentalizer when mature and is highly susceptible to decay.
Italian stone pine	3	Grows vigorously with no care
Olive	3	Highly tolerant of root loss and even transplanting
Plum	2	Sensitive to a variety of stressors in the landscape
Silver wattle	2	Weedy to the point of invasiveness in this area, but genus is reportedly intolerant of root injury.

Root Loss inside TPZs

Although any root loss inside the TPZ may cause a short-term decline in tree condition, trees can usually recover adequately from the loss of up to 25% of the TPZ.

Tree stability is impacted at a shorter distance from the tree trunk. For linear cuts on one side of the tree, the minimum distance typically recommended is three times the DBH, measured from the edge of the trunk (*Best Management Practices: Root Management*, Costello, Watson, and Smiley, 2017). Any distance shorter than this increases a tree's likelihood of failure.

Roots and Foundations

Tree roots do not generally grow under houses, as foundation installation requires these areas to be heavily compacted and dry. As discussed above, these conditions do not meet trees' needs for root colonization. Roots may grow under houses if foundations are poorly installed, or if trees are growing in contact with the foundation.

Sudden oak death (SOD)

Sudden oak death is caused by a nonnative pathogen called Phytophthora ramorum. As the name suggests, susceptible trees can decline within weeks of exhibiting clear symptoms, although initial infection likely occurs much earlier.

Tanoaks (*Notholithocarpus densiflorus*) and coast live oaks (*Quercus agrifolia*) are the two tree species most often killed by the pathogen. California black oaks (*Quercus kelloggii*) are also susceptible. Blue oaks (*Quercus douglasii*) and valley oaks (*Quercus lobata*) are not susceptible.

The life cycle of sudden oak death requires a secondary plant host for reproduction. California bay (*Umbellularia californica*) is widely considered the most serious secondary host, though rhododendrons (*Rhododendron* spp.), camellias (*Camellia* spp.), and other common landscape plants are also suitable.

Laboratory testing for sudden oak death is possible but costly and difficult. Early treatment with fosphite (e.g., Agri-fos) can prevent infection and can prolong the life of a mildly infected tree, but there is no cure.

When performing landscaping work on a property where sudden oak death is known or suspected to be present, proper sanitation measures must be employed to prevent the disease from spreading to other locations. Notably, all debris should be retained onsite if possible, and all equipment, including workers' boots, should be cleaned before going to another site.[5]

Tree Appraisal Methods

We use the trunk formula technique with discounting for condition and functional and external limitations, as detailed in the second printing of the 10th Edition of the *Guide for Plant Appraisal* (Council of Tree and Landscape Appraisers, 2019).

For palms, we use the approximate height of clear trunk (estimated visually) multiplied by the per-foot cost given in the regional plant appraisal committee species classification for California.

[5] Sudden Oak Death Guidelines for Arborists. California Oak Mortality Force. 2014. Available at https://www.suddenoakdeath.org/wp-content/uploads/2014/12/arborist-06-08-with-2014-map.pdf

Conclusions

Water Line

Tree #5 must be removed if the water line will be installed via trenching. Trenching would also likely result in moderate impacts to trees #2-4, 6, and 10, and minor impacts to trees #8 and 9.

If installed via directional boring at a depth of at least 3 feet, impacts to all these trees would be minimal to minor. To our knowledge, this option has not yet been explored.

Driveway

Trees #24, 30, 33, 35, 38, and 40 must all be removed for the proposed driveway.

Installation of the proposed driveway and associated grading and retaining walls will likely cause major impacts to trees #21 and 22; moderate impacts to tree #29; and minor impacts to tree #25.

No other location appears likely to result in fewer overall tree impacts.

Parking Area

Trees #37 and 39 must be removed for the parking area to be installed.

House

Tree #40 must be removed for the house to be constructed.

Pool and Pool Patio

Trees #41 and 42 must be removed for the pool to be constructed.

Impacts to Parcel 2 tree #25 from installation of the retaining wall for the pool patio will likely be minor.

Vegetated Swale

As shown, the proposed vegetated swale at the southeast property corner will likely cause major impacts to tree #43 and minor impacts to tree #44 and Parcel 2 tree #25. We feel

this feature can likely be modified to reduce impacts to tree #43 with relative ease, but to our knowledge, this has not yet been explored.

Artificial Turf Area and Associated Retaining Wall

Trees #30 and 31 will need to be removed for this feature to be installed.

Construction access for the retaining wall will likely cause minor impacts to tree #29.

Minimal Impacts

Trees #1, 7, 11-20, 23, 26-28, 31, 32, and 34, and Parcel 2 tree #24, are unlikely to undergo significant impacts from the project as proposed if fenced appropriately. Some of these trees may be impacted by the Parcel 2 project - please see the Parcel 2 tree protection report for more details.

Trees #45-100 are unlikely to undergo any impacts from the project as proposed, as they are located well away from the project area on the other side of the ditch running through the middle of the property.

Tree #36 is effectively dead, so impacts from the project are irrelevant. Tree stability will likely be unaffected by project features.

Recommendations

Design Phase

1. Explore design options for the following which may minimize impacts to trees:
    a. Water line - consider the following options, and others if desired:
        i. Installation via directional boring at a depth of at least 3 feet, and
        ii. Installation in a different location with fewer tree impacts.
    b. Grading for driveway - minimize as much as practical within TPZs
    c. Vegetated swales - explore options to lessen impacts to tree #43.
2. Locate sewer, gas, and electrical service outside tree TPZs insofar as practical.

Preconstruction Phase

1. Remove trees #24, 30, 33, 35, and 37-42, upon receipt of a permit from the Town of Los Gatos.

a. Retain debris from all coast live oaks and California bays onsite, and preferably other tree species as well. Comply with all other industry best practices for dealing with sudden oak death-infected material.

2. All tree work must comply with the following Town requirement:

> Pruning or root pruning must be supervised by an ISA-certified arborist or an ASCA-Registered Arborist. See Section 29.10.1010 of the Town Code for specifications to determine if a pruning permit is required.

3. Install tree protection fencing for trees approximately as shown in the Tree Map, below.
    a. Minimum distances from trunk centers are given on the Tree Map. A larger area may be protected if desired.
    b. Where existing barriers which will be retained impede access comparably to tree protection fencing, these barriers are an acceptable substitute for tree protection fencing.
    a. Please be aware that tree protection fencing may differ from ideal tree protection zones, and from canopy sizes.
    c. Tree protection must comply with the following town requirements:

> Tree protection fencing requirements:
> 1. Six-foot high chain link fencing mounted on two-inch diameter galvanized iron posts shall be driven into the ground at least two-feet deep at no more than ten-foot spacing. When stipulated, for existing paving areas that will not be demolished, posts may be supported by concrete base.
> 2. Posted eight and one-half-inch by eleven-inch sign on each tree fence stating: "Warning – Tree Protection Zone – This fence shall not be removed and is subject to penalty according to Town Code 29.10.1025"
> 3. Labeled photographs of the installed fencing shall be emailed to the project planner prior to issuance of permits.
> 4. Tree protection fencing is required to remain in place throughout construction.
>
> Any protected tree on-site will require replacement according to its appraised value if it is damaged beyond repair as a result of construction.

Construction Phase

1. Maintain tree protection fencing as detailed above.
2. For all project features within TPZs:
    a. Hand-excavate nearest edge within tree protection zone to the full depth of the feature being installed or to a depth of three feet, whichever is shallower.

b. Retain as many roots as practical.
c. If roots over 1" in diameter must be cut, sever them cleanly with a sharp saw or bypass pruners.
d. Root pruning must comply with the following town requirement:

> Pruning or root pruning must be supervised by an ISA-certified arborist or an ASCA-Registered Arborist. See Section 29.10.1010 of the Town Code for specifications to determine if a pruning permit is required.

e. Notify project arborist when excavation is complete. Project arborist shall inspect work to make sure all roots have been cut cleanly.
f. If excavation will be left open for more than 3 days:
    i. Cover excavation wall nearest tree with several layers of burlap or other absorbent fabric.
    ii. Install a timer and soaker hoses to irrigate with potable water twice per day, enough to wet fabric thoroughly.

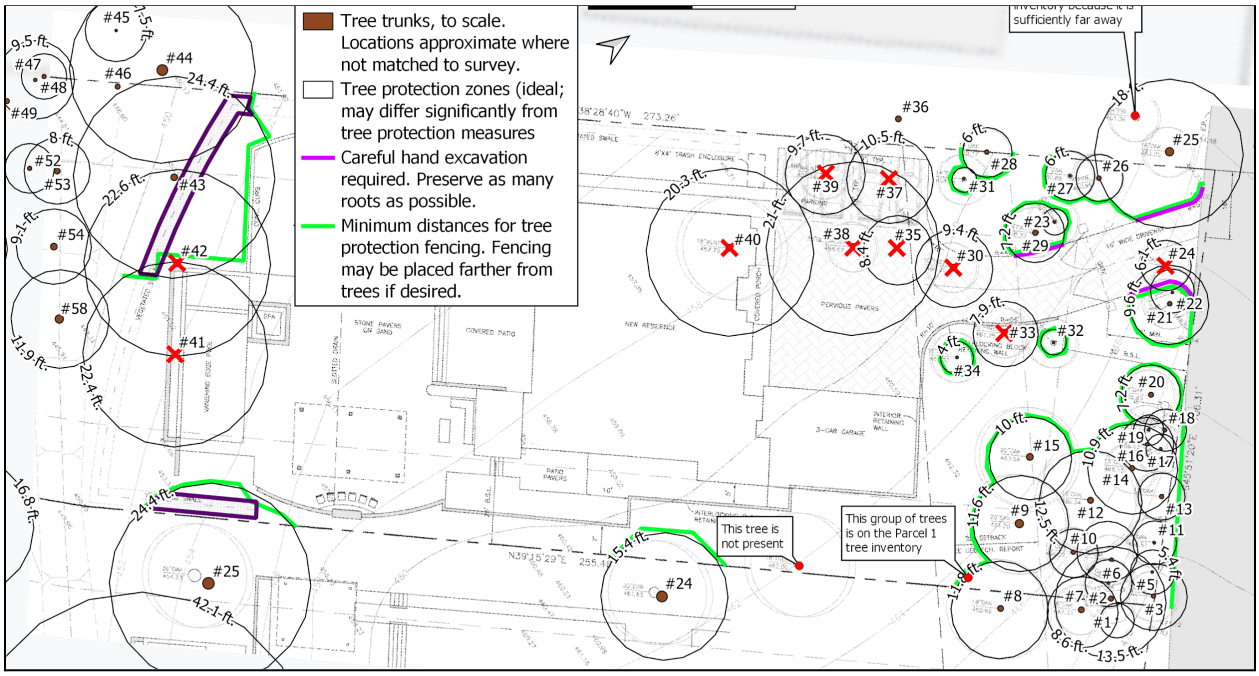
3. Excavation for vegetated swale must occur after exterior work is completed and all heavy machinery has left the site. Tree protection fencing must be removed before vegetated swale can be installed within TPZs.

Post-Construction Phase

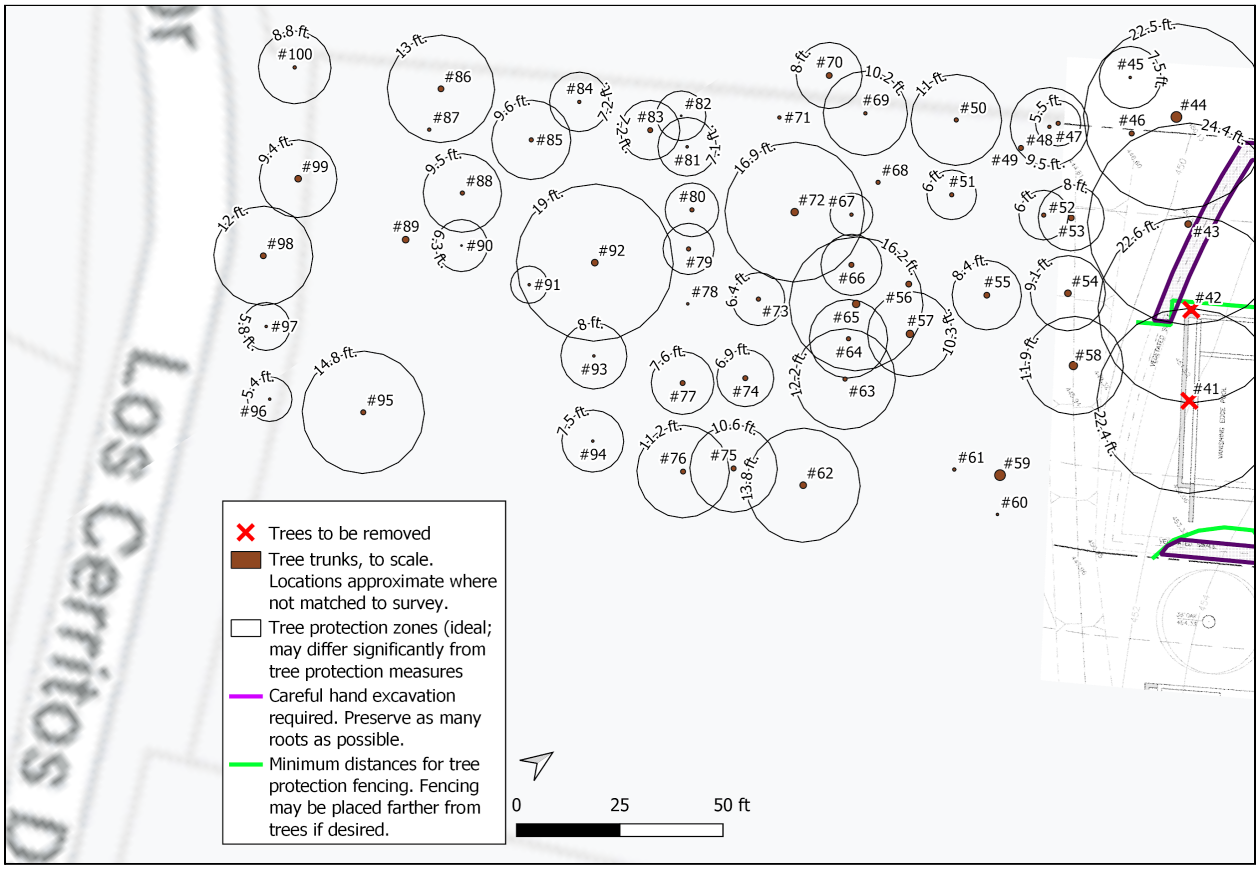
1. Provide supplemental irrigation for trees #2-4, 6, 8-10, 21, 22, 25, 29, 43, 44, and Parcel 2 tree #25
2. Plant replacements for trees #24, 30, 33, 35, and 37-42. Canopy sizes and replacement requirements are as follows:
    a. Tree #24 - 20 feet - three 15-gallon trees
    b. Tree #30 - 35 feet - four 15-gallon trees
    c. Tree #33 - 30 feet - four 15-gallon trees
    d. Tree #35 - 20 feet - three 15-gallon trees
    e. Tree #37 - 20 feet - three 15-gallon trees
    f. Tree #38 - 30 feet - four 15-gallon trees
    g. Tree #39 - 15 feet - three 15-gallon trees
    h. Tree #40 - 50 feet - six 24-inch box trees or three 36-inch box trees
    i. Tree #41 - 20 feet - three 15-gallon trees
    j. Tree #42 - 40 feet - four 15-gallon trees

Tree Maps

Map 1: area of impact



Map 2: area beyond ditch running through middle of property



Supporting Photographs

Image 1: mixed species grove #1-31 (background, right to left), deodar cedar #7 (background, right), and valley oak #8 (foreground, right)

Image 2: Italian stone pines #32-34 (right to left, #32 obscured)

Image 3: coast live oak #25

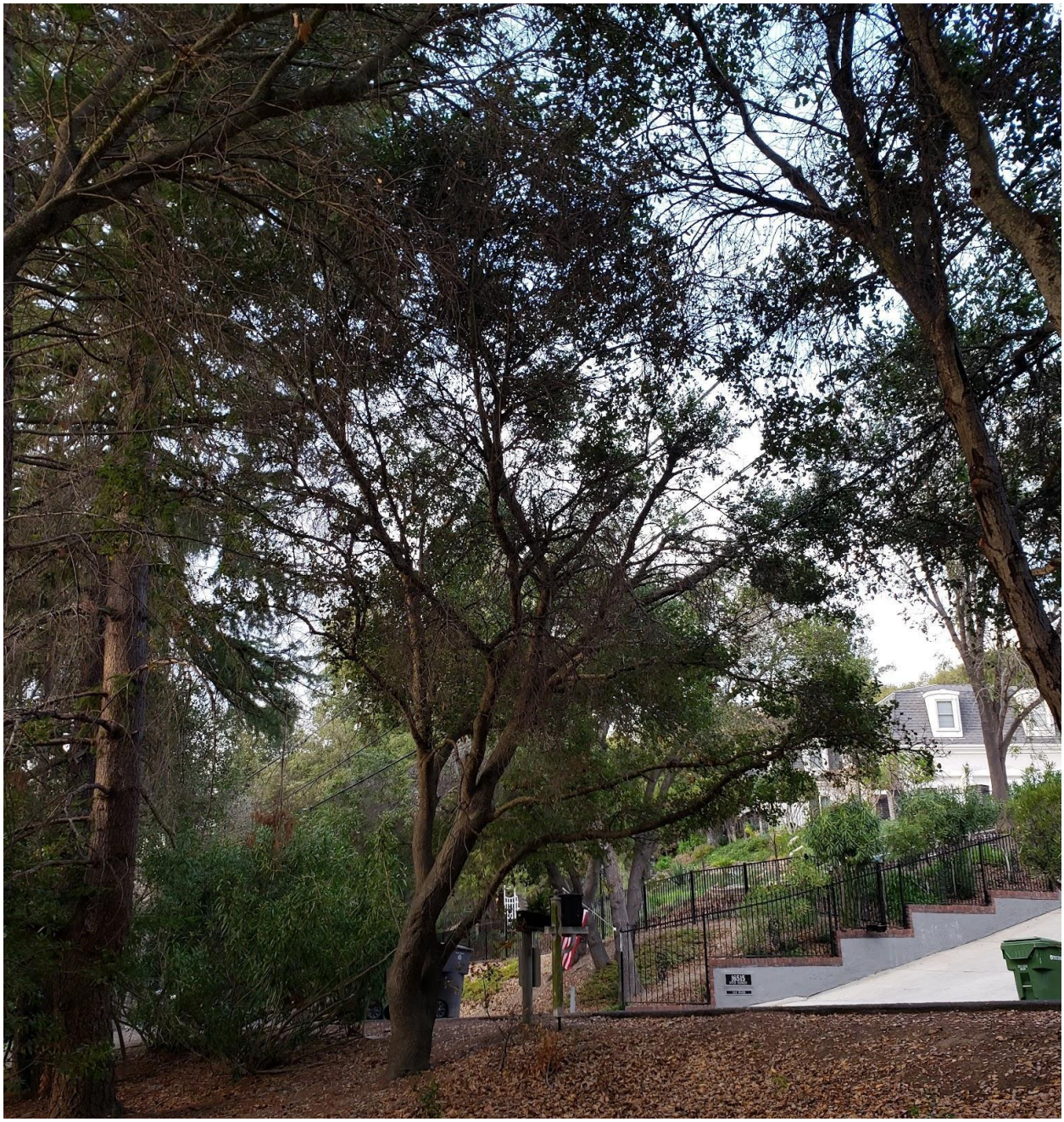


Image 4: plum #35

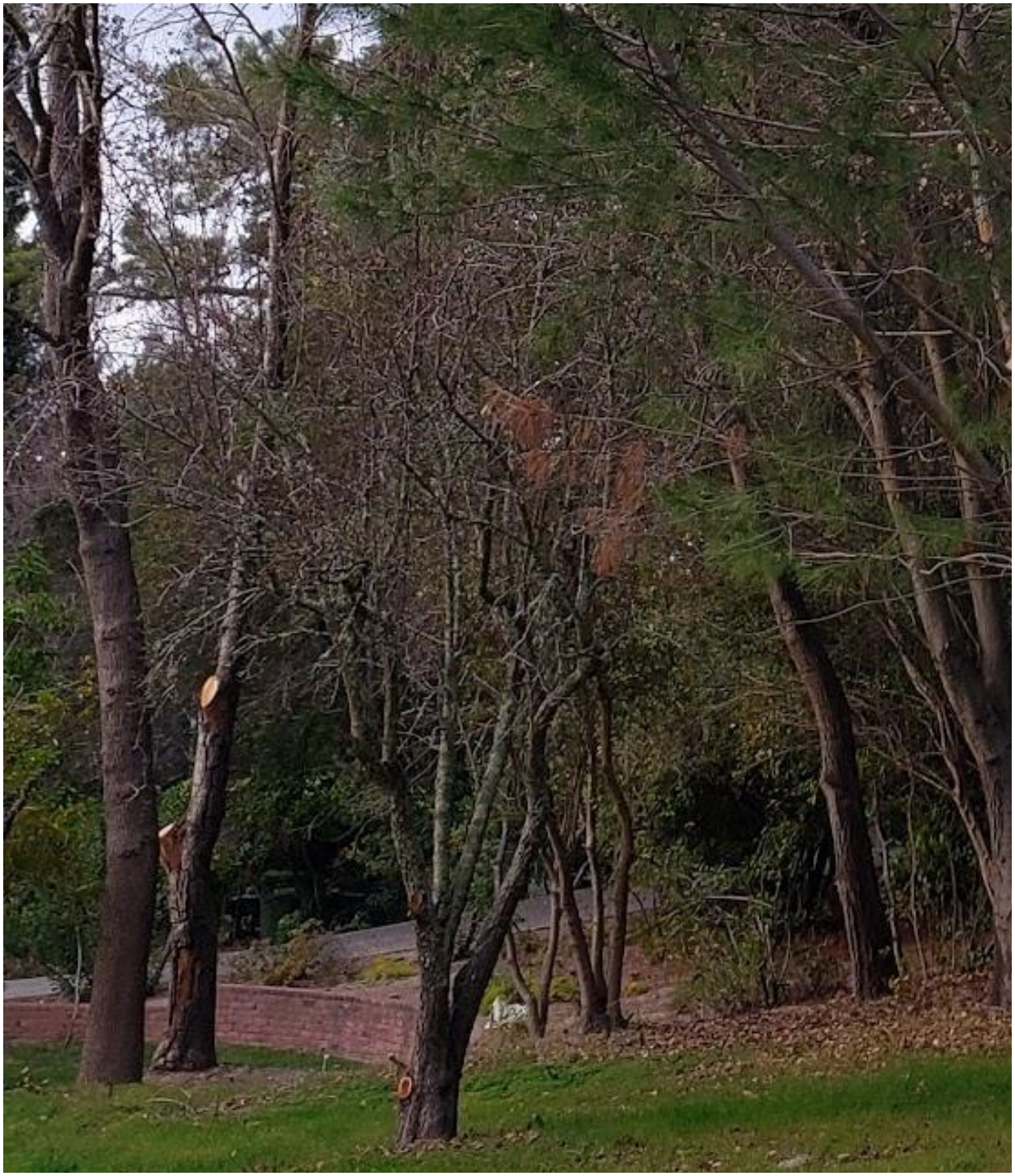


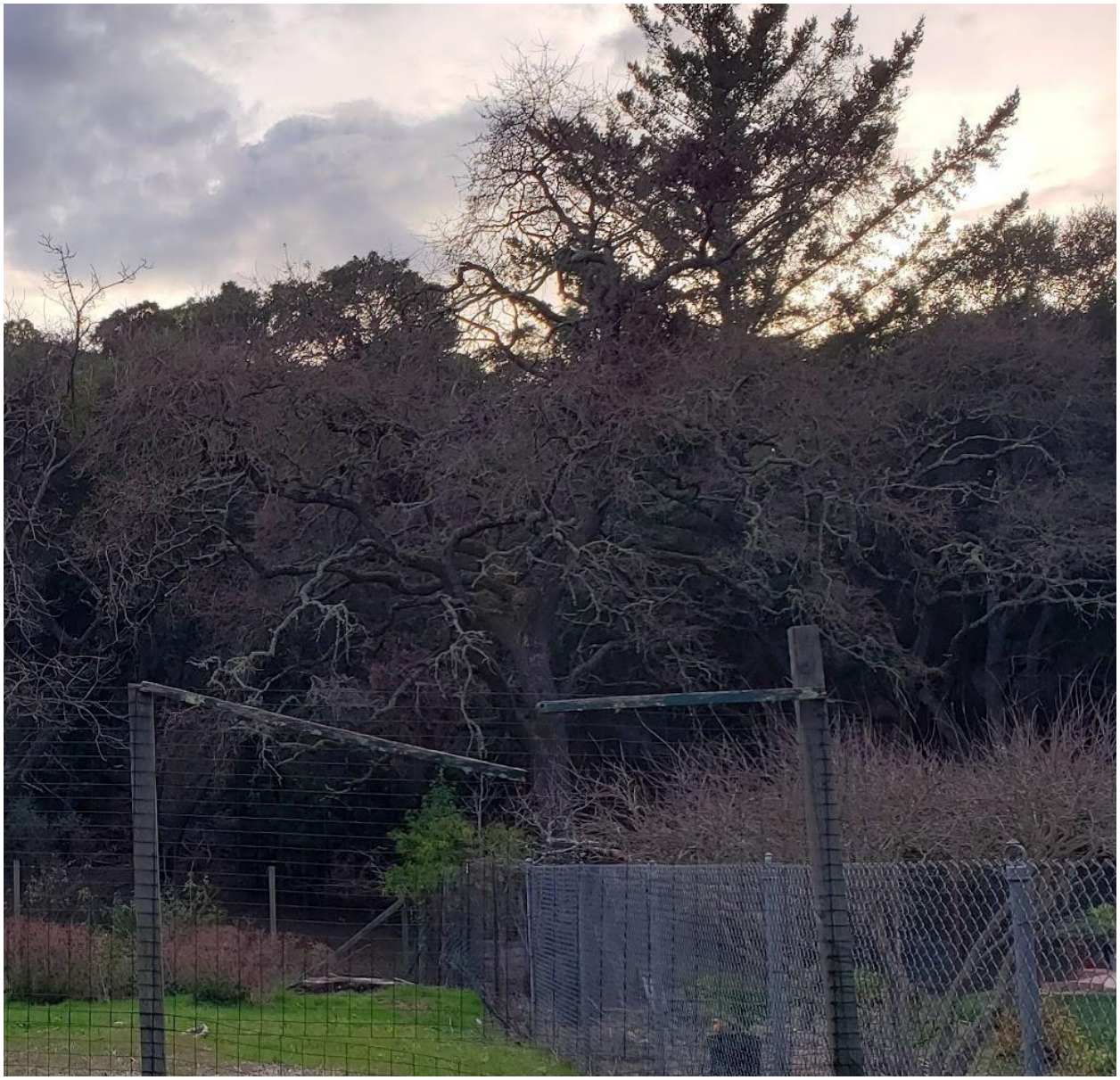
Image 5: coast live oak #36 (center, background, bark delaminating) and trunk of valley oak #37 (left, foreground)

Image 6: almond #38

Image 7: Northern California black walnut #40

Image 8: Northern California black walnuts #41-43 (left to right)

Image 9: valley oak #44



Respectfully submitted,

Katherine Naegele
She/Her
Consulting Arborist
Master of Forestry, UC Berkeley
International Society of Arboriculture Certified Arborist #WE-9658A
ISA Tree Risk Assessment Qualified
American Society of Consulting Arborists, Member
katherine@aacarbor.com
(408) 201-9607 (direct cell)
(408) 675-1729 (main cell)
aacarbor.com
Yelp

Terms of Assignment

The following terms and conditions apply to all oral and written reports and correspondence pertaining to the consultations, inspections, and activities of Aesculus Arboricultural Consulting:

1. All property lines and ownership of property, trees, and landscape plants and fixtures are assumed to be accurate and reliable as presented and described to the consultant, either orally or in writing. The consultant assumes no responsibility for verification of ownership or locations of property lines, or for results of any actions or recommendations based on inaccurate information.
2. It is assumed that any property referred to in any report or in conjunction with any services performed by Aesculus Arboricultural Consulting is in accordance with any applicable codes, ordinances, statutes, or other governmental regulations, and that any titles and ownership to any property are assumed to be good and marketable. The existence of liens or encumbrances has not been determined, and any and all property is appraised and/or assessed as though free and clear, under responsible ownership and competent management.
3. All reports and other correspondence are confidential and are the property of Aesculus Arboricultural Consulting and its named clients and their assigns or agents. Possession of this report or a copy thereof does not imply any right of publication or use for any purpose, without the express permission of the consultant and the client to whom the report was issued. Loss, removal, or alteration of any part of a report invalidates the entire appraisal/evaluation.
4. The scope of any report or other correspondence is limited to the trees and conditions specifically mentioned in those reports and correspondence. Aesculus Arboricultural Consulting assumes no liability for the failure of trees or parts of trees, inspected or otherwise. The consultant assumes no responsibility to report on the condition of any tree or landscape feature not specifically requested by the named client.
5. All inspections are limited to visual examination of accessible parts, without dissection, excavation, probing, boring or other invasive procedures, unless otherwise noted in the report, and reflect the condition of those items and features at the time of inspection. No warranty or guarantee is made, expressed or implied, that problems or deficiencies of the plants or the property will not occur in the future, from any cause. The consultant shall not be responsible for damages caused by any tree defects, and assumes no responsibility for the correction of defects or tree related problems.
6. The consultant shall not be required to provide further documentation, give testimony, be deposed, or to attend court by reason of this appraisal/report unless subsequent contractual arrangements are made, including payment of additional fees for such services as set forth by the consultant or in the fee schedule or contract.
7. Aesculus Arboricultural Consulting makes no warranty, either expressed or implied, as to the suitability of the information contained in any reports or correspondence, either oral or written, for any purpose. It remains the responsibility of the client to determine applicability to his/her particular case.
8. Any report and the values, observations, and recommendations expressed therein represent the professional opinion of the consultant, and the fee for services is in no manner contingent upon the reporting of a specified value nor upon any particular finding.
9. Any photographs, diagrams, charts, sketches, or other graphic material included in any report are intended solely as visual aids, are not necessarily to scale, and should not be construed as engineering reports or surveys unless otherwise noted in the report. Any reproduction of graphic material or the work product of any other persons is intended solely for clarification and ease of reference. Inclusion of said information does not constitute a representation by Aesculus Arboricultural Consulting as to the sufficiency or accuracy of that information.

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
1	Coast live oak	Quercus agrifolia	4.2	10	1		1		3	4.2	$1,040.00	None from this project if fenced (see Parcel 2 report for impacts from that project)	-
2	Coast live oak	Quercus agrifolia	13.5	15	1		1		3	13.5	$540.00	Moderate from water line if installed via trenching (see Parcel 2 report for impacts from that project)	-
3	Coast live oak	Quercus agrifolia	10.8	20	2		2		3	8.1	$890.00	Moderate from water line if installed via trenching (see Parcel 2 report for impacts from that project)	-
4	Coast live oak	Quercus agrifolia	7.6	15	2		2		3	5.7	$2,030.00	Moderate from water line if installed via trenching (see Parcel 2 report for impacts from that project)	-
5	Coast live oak	Quercus agrifolia	7.2	10	2		2		3	5.4	$4,810.00	Incompatible with water line if installed via trenching	Two stems, DBH 5.3, 4.8
6	Coast live oak	Quercus agrifolia	9.8	20	2		2		3	7.4	$8,400.00	Moderate from water line if installed via trenching	Two stems, DBH 7, 6.9. Two leaders diverge at ground level

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
7	Deodar cedar	Cedrus deodara	17.2	20	3		3		3	8.6	$15,500.00	None from this project if fenced (see Parcel 2 report for impacts from that project)	-
8	Valley oak	Quercus lobata	15.7	40	3		3		2	11.8	$5,100.00	Minor from water line if installed via trenching (see Parcel 2 report for impacts from that project)	-
9	Coast live oak	Quercus agrifolia	23.2	30	3		3		3	11.6	$770.00	Minor from water line if installed via trenching	Two stems, DBH 15.0, 17.7. Diameter measured at about 4 above grade due to reverse taper. Poor attachment between leaders.
10	Deodar cedar	Cedrus deodara	11.8	10	3		3		3	5.9	$8,100.00	Moderate from water line if installed via trenching	-
11	Coast live oak	Quercus agrifolia	7.0	10	2		2		3	5.3	$2,180.00	None if fenced	-
12	Coast live oak	Quercus agrifolia	16.7	20	2		2		3	12.5	$4,310.00	None if fenced	-
13	Coast live oak	Quercus agrifolia	11.5	15	3		3		3	5.7	$8,100.00	None if fenced	Two stems, DBH 9.1, 7.0

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
14	Coast live oak	Quercus agrifolia	14.5	15	2		2		3	10.9	$1,120.00	None if fenced	Three stems, DBH 9.0, 8.4, 7.7
15	Coast live oak	Quercus agrifolia	20.0	30	3		3		3	10.0	$850.00	None if fenced	Four stems, DBH 11.2, 9.3, 11.5, 7.4. Poor attachments at all leader unions, particularly primary union about 6 inches above grade.
16	Coast live oak	Quercus agrifolia	8.6	10	2		2		3	6.5	$2,180.00	None if fenced	-
17	Coast live oak	Quercus agrifolia	7.4	15	3		3		3	3.7	$1,530.00	None if fenced	-
18	Coast live oak	Quercus agrifolia	10.2	20	3		3		3	5.1	$4,300.00	None if fenced	-
19	Coast live oak	Quercus agrifolia	7.4	15	3		3		3	3.7	$4,330.00	None if fenced	-
20	Coast live oak	Quercus agrifolia	14.3	30	3		3		3	7.2	$630.00	None if fenced	Diameter taken at about 2 above grade due to reverse taper. Poor leader union on side facing street about 6 above grade.

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
21	Coast live oak	Quercus agrifolia	12.8	30	2		2		3	9.6	$730.00	Moderate to major from new driveway and associated grading	-
22	Coast live oak	Quercus agrifolia	7.1	10	2		2		3	5.3	$2,460.00	Major from new driveway and associated grading	-
23	Coast live oak	Quercus agrifolia	6.4	10	3		3		3	3.2	$14,900.00	None if fenced	-
24	Coast live oak	Quercus agrifolia	12.2	20	3		3	X	3	6.1	$2,770.00	Incompatible with new driveway	-
25	Coast live oak	Quercus agrifolia	24.0	25	2	X	3		3	18.0	$1,110.00	Minor from new driveway and associated grading	Neighbor tree. DBH estimated.
26	Deodar cedar	Cedrus deodara	11.4	15	3		3		3	5.7	$4,180.00	None if fenced	-
27	Olive	Olea europaea	8.0	15	2		2		3	6.0	$3,030.00	None if fenced	Four stems, DBH 5.4, 4.3, 3.6, 2.0
28	Coast live oak	Quercus agrifolia	11.9	15	3		3		3	6.0	$9,200.00	None if fenced	-
29	Coast live oak	Quercus agrifolia	14.4	20	3		3		3	7.2	$840.00	Minor to moderate from new driveway and associated grading	Two stems, DBH 10.9, 9.4
30	Coast live oak	Quercus agrifolia	18.8	35	3		3	X	3	9.4	$510.00	Incompatible with new driveway	Poor attachment between leaders. 14.0, 12.6

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
31	Olive	Olea europaea	6.1	15	3		3		3	3.0	$3,500.00	None if fenced	Four stems, DBH 3.5, 3.4, 3.1, 1.9
32	Italian stone pine	Pinus pinea	6.2	10	3		3		3	3.1	$1,440.00	None if fenced	-
33	Italian stone pine	Pinus pinea	15.8	30	3		3	X	3	7.9	$1,520.00	Incompatible with retaining wall for new driveway	-
34	Italian stone pine	Pinus pinea	8.0	15	3		3		3	4.0	$6,700.00	None if fenced	-
35	Plum	Prunus sp.	8.4	20	2		2	X	2	8.4	$6,000.00	Incompatible with new driveway	Four stems, DBH 4.9, 4.8, 3.7, 3.2
36	Coast live oak	Quercus agrifolia	16.0	20	0	X	0		3	0.0	$0.00	N/A	Neighbor tree. DBH estimated. Nearly dead.
37	Valley oak	Quercus lobata	14.0	30	3		3	X	2	10.5	$1,690.00	Incompatible with new parking area	-
38	Almond	Prunus dulcis	16.8	15	1		1	X	2	21.0	$1,790.00	Incompatible with new driveway	Three stems, DBH 11.4, 10.2, 6.9. Largest leader measured at about 3 above grade due to reverse taper.
39	English walnut	Juglans regia	7.8	15	2		2	X	1	9.7	$4,650.00	Incompatible with new parking area	Two stems, DBH 5.9, 5.1

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
40	Northern california black walnut	Juglans hindsii	20.3	50	3		3	X	1	20.3	$8,300.00	Incompatible with new driveway	Trunk diameter measured at about 2 above grade due to reverse taper. Moderate mistletoe infestation.
41	Northern california black walnut	Juglans hindsii	17.9	20	2		2	X	1	22.4	$6,900.00	Incompatible with new pool	Three stems, DBH 11.5, 10.1, 9.3
42	Northern california black walnut	Juglans hindsii	18.1	40	2		2	X	1	22.6	$27,300.00	Incompatible with new pool	Two stems, DBH 14.0, 11.5
43	Northern california black walnut	Juglans hindsii	19.5	40	2		2		1	24.4	$600.00	Minor from new pool and synthetic turf; moderate to major from vegetated swale	Two stems, DBH 13.9, 13.7
44	Valley oak	Quercus lobata	30.0	50	3	X	3		2	22.5	$7,600.00	Minor from vegetated swale	Neighbor tree. DBH estimated.
45	Willow	Salix sp.	6.0	5	1	X	3		2	7.5	-	None - entire TPZ on other side of property line	Nearly dead. Neighbor tree. DBH estimated.
46	California bay	Umbellularia californica	14.0	0	0		0		1	0.0	-	N/A	Uprooted and cut down long ago, but retained onsite.

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
47	Coast live oak	Quercus agrifolia	11.0	15	3		3		3	5.5	-	None - on other side of ditch	Base is growing in contact with base of tree #46
48	California bay	Umbellularia californica	9.5	20	3		1		1	9.5	-	None - on other side of ditch	Two stems, DBH 7.0, 6.4. Base is growing in contact with the base of tree #47. DBH estimated, as annulohypoxylon cankers indicate possible sudden oak death
49	Coast live oak	Quercus agrifolia	14.0	0	0		0		3	0.0	-	N/A	Dead, trunk failed at about 6 feet above grade, and debris has been kept on site.
50	Coast live oak	Quercus agrifolia	11.0	15	1		1		3	11.0	-	None - on other side of ditch	Symptomatic for sudden oak death. DBH estimated to avoid contaminating equipment.

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
51	Coast live oak	Quercus agrifolia	12.0	20	3		3		3	6.0	-	None - on other side of ditch	Asymptomatic for sudden oak death, but a separate, dead coast live oak growing from base has annulohypoxylon cankers. DBH estimated to avoid contaminating equipment.
52	Coast live oak	Quercus agrifolia	12.0	15	3		3		3	6.0	-	None - on other side of ditch	Possible symptoms of sudden oak death. DBH estimated to avoid contaminating equipment.
53	Coast live oak	Quercus agrifolia	16.0	15	3		3		3	8.0	-	None - on other side of ditch	DBH estimated, because although tree is asymptomatic for sudden oak death, its base is growing in contact with that of tree #52
54	Coast live oak	Quercus agrifolia	18.2	20	3		3		3	9.1	-	None - on other side of ditch	-
55	Coast live oak	Quercus agrifolia	16.7	20	3		3		3	8.4	-	None - on other side of ditch	-

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
56	Coast live oak	Quercus agrifolia	16.3	0	0		0		3	0.0	-	N/A	Dead or nearly so. Most of tree is covered with ivy, with some possible live sprouts high in the canopy.
57	Coast live oak	Quercus agrifolia	20.6	30	3		3		3	10.3	-	None - on other side of ditch	Four stems, DBH 14.4, 11.8, 6.6, 6.0. Two smaller leaders are dead
58	Coast live oak	Quercus agrifolia	23.7	40	3		3		3	11.9	-	None - on other side of ditch	-
59	Coast live oak	Quercus agrifolia	30.0	40	0		0		3	0.0	-	None - on other side of ditch	Dead and symptomatic for sudden oak death. DBH estimated to avoid contaminating equipment.
60	Coast live oak	Quercus agrifolia	8.0	0	0		0		3	0.0	-	None - on other side of ditch	Dead and trunk failed long ago. DBH estimated due to close proximity to tree #59
61	Coast live oak	Quercus agrifolia	9.0	5	0		0		3	0.0	-	None - on other side of ditch	Dead, and trunk failed long ago. DBH estimated due to proximity to tree #59
62	Coast live oak	Quercus agrifolia	18.4	25	2		2		3	13.8	-	None - on other side of ditch	-

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
63	Coast live oak	Quercus agrifolia	12.2	10	1		1		3	12.2	-	None - on other side of ditch	Two stems, DBH 11.4, 4.4. Main stem is dead, apparently girdled by a wire or rope wrapped around the tree at about 4 feet above grade. The smaller stem is still alive and appears healthy.
64	Coast live oak	Quercus agrifolia	12.6	20	2		2		3	9.5	-	None - on other side of ditch	-
65	Coast live oak	Quercus agrifolia	21.6	30	2		2		3	16.2	-	None - on other side of ditch	Two leaders, 19.4, 9.5. Very large elephant ears swelling at union between the two leaders of the main trunk. this indicates internal weakness, and this tree will likely fail in the near future. Smallest leader is dead.
66	Coast live oak	Quercus agrifolia	14.8	15	3		3		3	7.4	-	None - on other side of ditch	-
67	Coast live oak	Quercus agrifolia	10.4	10	3		3		3	5.2	-	None - on other side of ditch	-

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
68	Coast live oak	Quercus agrifolia	12.0	0	0		0		3	0.0	-	None - on other side of ditch	Dead and falling apart. DBH estimated visually.
69	California bay	Umbellularia californica	10.2	20	3		1		1	10.2	-	None - on other side of ditch	-
70	Coast live oak	Quercus agrifolia	16.0	20	3	X	3		3	8.0	-	None - on other side of ditch	Neighbor tree. DBH estimated
71	Coast live oak	Quercus agrifolia	10.0	0	0		0		3	0.0	-	None - on other side of ditch	Dead. Trunk failed just above grade, and tree is hanging in tree #70
72	California black oak	Quercus kelloggii	22.6	40	3		3		2	16.9	-	None - on other side of ditch	Three stems, DBH 13.1, 9.9, 15.5
73	Coast live oak	Quercus agrifolia	12.8	20	3		3		3	6.4	-	None - on other side of ditch	-
74	Coast live oak	Quercus agrifolia	13.8	20	3		3		3	6.9	-	None - on other side of ditch	-
75	Coast live oak	Quercus agrifolia	14.1	15	2		2		3	10.6	-	None - on other side of ditch	-
76	Coast live oak	Quercus agrifolia	14.9	20	2		2		3	11.2	-	None - on other side of ditch	-
77	Coast live oak	Quercus agrifolia	15.1	30	3		3		3	7.6	-	None - on other side of ditch	-
78	Coast live oak	Quercus agrifolia	7.4	10	0		0		3	0.0	-	None - on other side of ditch	Dead
79	Coast live oak	Quercus agrifolia	12.3	15	3		3		3	6.2	-	None - on other side of ditch	-

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
80	Coast live oak	Quercus agrifolia	12.9	15	3		3		3	6.5	-	None - on other side of ditch	-
81	California bay	Umbellularia californica	7.1	15	3		1		1	7.1	-	None - on other side of ditch	-
82	California bay	Umbellularia californica	6.0	20	3		1		1	6.0	-	None - on other side of ditch	Two stems, DBH 5.0, 3.3
83	Coast live oak	Quercus agrifolia	14.4	20	3		3		3	7.2	-	None - on other side of ditch	Two leaders, DBH 12.0, 7.9
84	Olive	Olea europaea	9.6	15	2		2		3	7.2	-	None - on other side of ditch	Four stems, DBH 8.4, 3, 3, and 2. Diameters of 3 smaller stems were estimated
85	Coast live oak	Quercus agrifolia	12.8	15	2		2		3	9.6	-	None - on other side of ditch	-
86	Coast live oak	Quercus agrifolia	17.3	40	2		2		3	13.0	-	None - on other side of ditch	Three leaders, DBH 15.0, 7.0, 5.1. Smallest leader is dead and prone
87	Olive	Olea europaea	10.0	0	0		0		3	0.0	-	None - on other side of ditch	Dead and prone
88	Coast live oak	Quercus agrifolia	12.7	20	2		2		3	9.5	-	None - on other side of ditch	Two leaders, DBH 10.2, 7.6
89	Coast live oak	Quercus agrifolia	20.0	0	0		0		3	0.0	-	None - on other side of ditch	Dead, and trunk failed about 5 feet above grade. DBH estimated

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
90	California bay	Umbellularia californica	5.0	10	2		1		1	6.3	-	None - on other side of ditch	Failed about 9 feet above grade when struck by tree #89
91	California black oak	Quercus kelloggii	6.0	15	3		3		2	4.5	-	None - on other side of ditch	Below hanging trunk of tree #89. DBH estimated.
92	Coast live oak	Quercus agrifolia	19.0	30	1		1		3	19.0	-	None - on other side of ditch	Two stems, DBH 18 and 6. Possible symptoms of sudden oak death. Smaller leader is dead. DBH estimated to avoid contaminating equipment
93	California bay	Umbellularia californica	8.0	20	3		1		1	8.0	-	None - on other side of ditch	Failed stem of tree #89 resting on this tree. DBH estimated.
94	Silver wattle	Acacia dealbata	6.0	10	1		1		2	7.5	-	None - on other side of ditch	DBH estimated, as trunk access was impeded by fallen trees, limbs, and undergrowth
95	Silver wattle	Acacia dealbata	14.8	50	2		1		2	14.8	-	None - on other side of ditch	Two stems, DBH 12.0, 8.6. Additional small, prone leaders were not measured

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
96	Silver wattle	Acacia dealbata	7.2	10	3		1		2	5.4	-	None - on other side of ditch	-
97	Silver wattle	Acacia dealbata	7.7	40	3		1		2	5.8	-	None - on other side of ditch	-
98	Silver wattle	Acacia dealbata	16.0	30	3		1		2	12.0	-	None - on other side of ditch	DBH estimated, as soft slope impeded trunk access
99	Coast live oak	Quercus agrifolia	18.7	30	3		3		3	9.4	-	None - on other side of ditch	Large leader failed at grade long ago on downhill side, but appears to have been removed from the site
100	California bay	Umbellularia californica	8.8	30	3		1		1	8.8	-	None - on other side of ditch	-
P2 24	Deodar cedar	Cedrus deodara	30.8	50	3	X	3		3	15.4	$3,220.00	None if fenced (see Parcel 2 report for impacts from that project)	-

Tree #	Common Name	Species	DBH (in.)	Canopy size	Vitality (0-3)	Off-Site Tree?	Suitability for preservation (0-3)	Remove?	Species Construction Tolerance (1 = poor, 3 = good)	TPZ radius (ideal; ft. from center of trunk)	Appraised Value	Expected Impacts	Notes
P2 25	Coast live oak	Quercus agrifolia	32.5	50	2	X	2		3	24.4	$4,450.00	Minor from vegetated swale; minor from construction access for retaining wall for pool patio (see Parcel 2 report for impacts from that project)	Two leaders diverge at about 4 feet above grade with bark inclusion about 3 feet long. Measured at about 1 foot above grade due to substantial reverse taper